AMERICAN FARMER.

RURAL ECONOMY, INTERNAL IMPROVEMENTS, PRICES CURRENT.

" *O Fortunatos nimium sua si bona norint*
" *Agricolas.* . . . . VIRG.

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AGRICULTURAL.

FOR THE AMERICAN FARMER.

On the advantages to be derived from the more
GENERAL USE OF OXEN,
FOR THE COMMON PURPOSES OF
AGRICULTURE;
AND ON THE BEST MODE OF GEARING THEM.

Illustrated by an Engraving.

No. I.

Port Tobacco, 1st Dec. 1819.

MR. SKINNER, Sir,—I have often observed, in the few excursions I have made through this and the neighboring state to the south, with much regret, sometimes indeed with mingled pain, with what neglect, contempt, and even harshness, my countrymen are in the habit of treating their labouring cattle. Of the several species, the horse generally fares best; there is something so sprightly and attractive in his constitution, that he imperceptibly wins the regard of his master; and, thus too often, comes in for more than his share, among his fellow labourers, of his owner's kindness and attention. The generous qualities of the pleasure horse, and the proud vivacity of the courser, begets in men an affection for the whole race, extended even to the homely drudge that drags the plough, to the disparagement and prejudice of the ox, the ass, and the mule, whose claims are in many respects much superior.

These observations have induced me to make some enquiry into the relative merits of the several species of beasts of burthen used in agriculture, and to reflect upon the manner of treating and working them to the greatest advantage.

There are four points of view in which the value of labouring cattle may be compared and estimated, their first cost, their work, their necessary food, and their utility after working.

We have in our country only three species of beasts of burthen in common use, the horse, the ox, and the mule; for, I believe, the ass is no where in common use. The price of these animals, like every thing else, varies considerably with time and place—and I may add, that their prices have not always either, been graduated simply by the demand for them, or by their real utility; but by a sort of fashion or caprice. I have known times when, and even now, in some neighborhoods, a good mule would command the price of more than a pair of well broke oxen. But laying aside this kind of temporary or neighborhood whim, I think it may be assumed as a general *relative* price current, of these labouring animals, that a good work ox can be purchased for one half the price of a horse, and one third less than a mule, equally good of their kind.

Neither of these three species of animals are fit for labour sooner than three years old. In that interval of useless infancy, the horse requires very particular attention. During the winter season he should have some grain, be carefully housed and well provided with good rack food. The mule requires less attention, but if not more carefully raised than an ox, his size and powers will be very inferior. The ox requires only common pasture during the summer, and to have the advantage of the farm-yard shed, with hay or straw in the winter. It is admitted on all hands, that the ox makes double the quantity of manure during the same time, of either of the other animals, owing to his consumption of a greater mass of coarse food which is not so thoroughly masticated, as the better kind, taken in by the horse. From the system of husbandry prevalent in the lower parts of this and the state of Virginia, where cattle have the range of the extensive marshes bordering on the tide waters it may be asserted with confidence, that the rearing of a three year old steer will not cost the farmer one third as much as to raise a horse or mule to the same age. Hence it appears that the farmer, with the same cost and care, can have two or three teams of oxen for one of horses or mules, with a proportionate increase of manure.

The great improvement in the discipline and management of the horse, and his active movements, have given him a decided preference in many kinds of service; but, as a *strong labourer*, he is in all respects equalled, and in many surpassed by the ox. The docility and sagacity of the horse is very remarkable, indeed, in some respects surprising; but that of the ox is no less so. It has been noticed in all countries and the most remote ages—we are told in scripture, that " the ox knoweth his owner." And this patient, willing labourer awakened a sympathy so lively as to induce the Jewish lawgiver to to enact a special provision in his behalf, for it was declared as a law to the children of Israel, that " Thou shalt not muzzle the ox when he treadeth out the corn"—while, on the other hand, it would seem to be a fair inference from the prohibition, (" Thou shalt not let thy cattle gender with a diverse kind.") contained in the nineteenth chapter of Leviticus, that the ugly mule race was much despised or wholly unknown in Judea.

With the same measure of attention and kind treatment, the ox is certainly the most docile and tractable of three several species of beasts of burthen. If he has not the gaiety of the horse, neither has he that fretful restiveness of temper which renders the horse, at times, entirely unmanageable. Neither is the ox ever influenced by the sulky perverseness of the mule. The ox has one excellence peculiar to himself—he is steady, willing and firm to the last—he never balks—at a steep pinch, or heavy pull, a yoke of oxen are the sheet anchor of the team—if they cannot move forward, they will at least hold their ground to the utmost of their strength.

As to the question, which of the three species of labouring quadrupeds are best suited to our hot summers, and to our climate in general? It can only be answered by experience and observation—it is believed, however, that so far as we may be allowed to adduce the experience of other countries, there can be no doubt upon the subject. In various parts of India within and near the tropics, the ox is used for all purposes, for travelling and riding, as well as heavy labour. In all parts of Spanish America the ox is used as a labourer; and great numbers are imported into the West Indies annually, from the Spanish main, as beasts of burthen.

But the ox is said to be slow and unwieldy in his pace. It must be admitted, that as a racer, or fleet traveller, he is far inferior to the horse in all countries, and under every state of discipline and improvement. But, *with the agriculturist*, the sole enquiry, upon this subject is, which of these three kinds of animals can perform the greatest amount of *heavy labour* in the shortest time and at the least expense? Because for the purposes of *hard work* neither of them can be pushed faster than a common walk.

Neat cattle are so very valuable in various ways, that, in selecting a stock for rearing, almost all their uses are more attended to than that of their labour. In breeding horses we generally have but one object in view, that is, their capacity for service; but in rearing neat cattle, the principal objects are to improve the quality and quantity of every part of the body of the animal, as well as to increase the quantity of milk and butter—and, in carefully attending to these objects the improvement of the capacity of the animal, for service, is too often wholly overlooked.

Judging from the account which you, Mr. Editor, have given us in the first No. of your paper, of the two large bullocks raised by Mr. Barney, I am satisfied, that there is nothing in our climate or country adverse to the de-

velopment of the greatest excellencies of the ox in every respect whatever. Of the two bullocks there spoken of, Columbus, or the American, appears to me from the drawing of him, to be of the true and best stock for all purposes; his legs were long in proportion to his body, and he was much taller in proportion than the English cattle that have been imported into our country as breeders, and his enormous weight is a proof, that cattle of such proportions are as eminently suited for fattening and for beef as any other, the English notion about short legs and broad buttocks to the contrary notwithstanding. From what I can learn the quantity of milk given by a cow is by no means governed by her external shape. Hence it would appear that the proportions best suited for service may be particularly attended to without in the least deteriorating the breed in other respects.

The cattle of the great plains of Buenos Ayres, and in the valleys of Chili are alike remarkable for their activity and sprightliness. Except the sleepiness of countenance, expressed in the drawing of the ox Columbus, they are, in general, nearly of the same make and proportions. They are long legged, tall, and have great facility of progression, a proof of which is the undeniable fact, that the oxen of Buenos Ayres travel day after day, for a month together, with heavy loaded carts much faster than the common west country teams of the United States. Quick movements cannot be expected of the round duck-legged European breeds, with which the fine tall cattle of our country have been to often crossed and spoiled It would seem, that, even in England, farmers are beginning to get out of the notion of their squat round pretty cattle. The ox is beginning to be attended to as a working animal more than formerly; and, consequently his speed is considered as one of his excellencies. In some parts of England they have ox races; and it is said, that some years ago an ox ran four miles over the course at Lewis, for 100 guineas, at the rate of fifteen miles the hour: this was certainly not one of the low waddling family.

We are told that in India bullocks are used for the saddle and coach, and that their travelling oxen are curried, clothed, and attended with as much solicitude, and much greater kindness than we bestow on our best horses. The Indian cattle are extremely docile, and quick of perception, patient and kind; like the horses, their chief travelling pace is the trot, and they are reported by those who have ridden them often, to perform journeys of sixty successive days, at the rate of thirty to forty-five miles per day.

The ox may be worked to advantage from three until he is ten or twelve years of age, and can then be fattened, and will make excellent beef. Upon the whole, in whatever point of view the several species of labouring quadrupeds be compared, the ox seems to be decidedly the best for all *agricultural purposes*; and indeed, the point seems to be admitted by all the most skilful and intelligent farmers who have turned their attention to the subject.

There are three methods of yoking or harnessing this valuable animal to the cart or plough; the English, which is that of our country, and therefore need not be described; the French; and the Spanish methods. They are each essentially different, and each have their modifications. The question as to which of the three is the most judicious and best, involves, in some degree, the comparative anatomy of the animal, and an enquiry to ascertain the seat of his greatest power. The neck is obviously and proverbially the seat of the strength of the bull, and his horns are his weapons of attack and defence. The chief vigor of the animal seems to be thrown into his neck for the purpose of enabling him to wield those weapons with the greatest effect. The question is then, where and how the yoke should be placed on his neck, so as to enable him to exert his greatest power in propelling it forward.

It will be proper, in considering this matter, to attend it to the ordinary position of the animal, and the attitude he assumes when provoked or urged to put forth all his powers, and to exert his greatest strength. When a bull stands quite disengaged and at rest, his forehead rises backward from his nose to his horns at an angle of about forty-five degress from the horizon; and his horns most commonly project forward at about a right angle with the line of his forehead. But when the animal throws himself into an attitude of attack, and prepares to exert all his strength against an antagonist, his head is lowered near to the earth, his nose is bridled back, and his horns range nearly in a horizontal line; and when he moves forward, his whole power is thrown upon his horns, which not unfrequently are snapped short off by the potent push, without in the least injuring his neck. Hence it appears, that the line of grestest force, as thus exhibited by the animal himself, is from the root of the horns, with the neck a little depressed, passing below the middle of the body. Another proof of this being the true line of an ox's greatest force, may be observed by the attitude which oxen assume when yoked according to the method of our country, and urged forward to exert all their powers in draft; in such cases they uniformaly depress the neck and head, and assume the attitude of the bull in battle. It has thus seemed to me to be strongly indicated by nature, that the point of draft should be attached to the neck as near as practicable to the root of the horns; because to that point, when left to the dictates of nature the animal directs all his power when occasion calls it forth.

The American mode of yoking is open to many and very substantial objections; the first is that the line of draft is too high, and not in the line of the animal's natural force. If the bow be wide it admits of too much friction, and the yoke soons chafes the neck into a sore; if it be narrow, it is apt to obstruct the circulation in the vessels of the neck, and thus do material injury—if the bow be long it suffers the yoke to slip back nearly to the withers; if it be too short it is apt to obstruct the freedom of respiration—and in hot weather, in whatever way the yoke be adjusted, according to our mode, it very frequently galls and makes the neck very sore, or the bow galls the shoulders.

The French method of yoking is thus described—the labourer passes a piece of wood, of about one sixth of the weight of the English yoke, across the forehead of his cattle, having previously neatly hollowed out the extremities of it to fit the mould of the head, and lined those hollows with a piece of woolly sheep-skin, to answer the purpose of a soft pad or cushion. This light and easy yoke he braces to the horns with a small thong of leather, attaches the beam of his plough to the middle part of it, and the animal is completely equipped for his labour.

This method seems to place the line of draft very nearly where it should be; but, although much better than ours, it is liable to some objections. The pressure must, occasionally, be too great on the front bone of the skull, which is by no means of sufficient strength to resist a great force, as is evinced by observing what a small stroke in that spot will bring the largest bullock to the ground. This mode must also be attended with considerable inconvenience, if it be not altogether impracticable for the wheel pair of oxen, that have to bear up the prodigious weight of the tongue of the cart.

According to the Spanish method, the yoke is placed on the neck without a bow, and is made fast to the base of the horns by a long leathern strap. The yoke is usually about a foot longer than ours, and owing to its position, length, or some other cause, the oxen walk erect and never hang-off in that awkward and injurious manner that ours too often do. As the yoke is thus kept perfectly stationary it never chafes or galls. Mr. Bland, one of the late commissioners to South America, in his report, thus describes the ox carts which cross the great pampas of Buenos Ayres; "The Tucuman and Mendoza carts, at a little distance looked like thatched cabbins slowly moving over the plain—the whole machine is destitute of a nail or a bit of iron; its great coarse wheels are not less than eight feet in diameter; six oxen, in general noble strong animals, move it; the two front pair have a great length of cord by which they draw; and the load of the cart which on an average is not less than four thousand weight, is pretty nearly balanced on the axletree; the body of the cart is either covered with raw hide or thatch, made of reeds or straw; and with a collection of brushwood, as fuel, tied on the top, and brought from the westward of the pampas, these carts are seen crossing the plains in caravans of from thirty to forty to-

gether. On the journey the oxen are unyoked occasionally through the day, and night; and permitted to seek their food round about. Thus without any other provision than what is necessary for himself, the carrier pursues his way over a waste of thirty days or six weeks passage. From Buenos Ayres to Mendoza the distance is nine hundred miles; and the journey is performed in about thirty days."

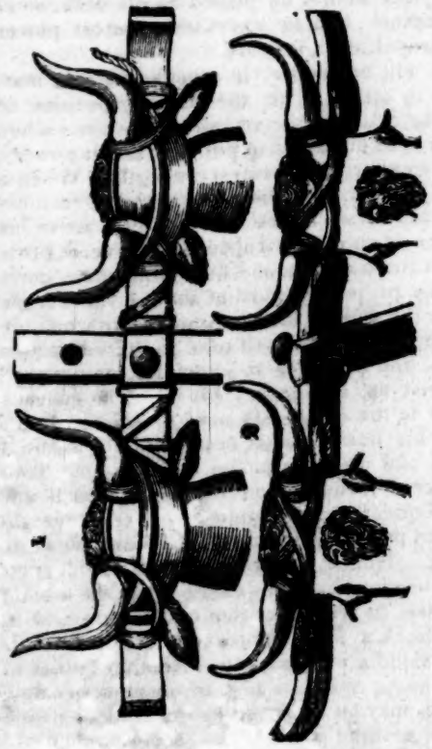
A similar description is given by Laborde, in his statistical view of Spain, of the ox carts and gear of Old and New Castile. And it would seem that a similar method of gearing has long prevailed in some parts of France, from the following note to the sixth chapter of the first book of Rabelais, treating of the inestimable life of the great Gargantua—"*Let the four foremost oxen do the work*, is a proverbial expression in the province of Poitou, where, not having horses enough to draw their waggons and carts, they usually draw with three couple of oxen, if they go far and the way is bad. The four foremost, which are the ablest, follow each other very close, but they are at a considerable distance from the two thillers, that when the cart or wain is set fast in a slough, these four, which are made fast to it, may draw out of the mire the two others, together with the wagon or cart."

The oxen throughout the provinces of Buenos Ayres and Chili, and it is believed in all Spanish America, are yoked in this Spanish method; and I have been assured by a careful observer, that the oxen not only move and support their labour with greater apparent ease; but, that among the hundreds that reach the city of Buenos Ayres after more than 2 months constant travelling from the interior, there is no such thing to be seen among them as a galled or sore neck. The load of Buenos Ayres carts, as stated by Mr. Bland, is poised upon the axletree, so as to throw very little weight forward upon the neck of the oxen: and to prevent even that little from being needlessly oppressive to the animal, and also to prevent the cart from canting up and sliding the load out behind, there is tied to the end of the tongue, and also to the hinder part of the body, small sticks of wood which serve as props when the team stops, to keep the cart balanced in a horizontal position.

The arguments in favour of the Spanish method of yoking are great, and seems to be unanswerable, where the oxen are to be geared to a cart, or the draft is nearly level with or rather above the body of the animal. But when geared for the plough, in this manner, there are some matters which must be attended to. The Spanish plough is so rude a machine as not to be worth describing, farther than to show how it has developed an apparent inconvenience in this method of yoking. Instead of a chain or trace fastened from the yoke to the nose of the plough-beam, the beam itself is made barely of sufficient length to pass between the oxen, and fasten to the yoke; the consequence of which is, that the line of draft being almost immediately from the heels of the animal to the root of his horns, the horns are raised up perpendicularly and his nose is elevated in an unnatural attitude, instead of being bridled back and depressed into the position of great bodily exertion: this, however, it is evident, is altogether the effect of the manner of gearing the oxen to this awkward plough, and could not be effected according to our method, where the line of draft would be higher and more in the rear of the animal.

On inspecting the plan of a yoke for working oxen *singly*, which you have given in the fifth No. of your paper, I am satisfied, that if the yoke were placed and fastened on the neck in the Spanish method, without a bow, that oxen would be found thus geared, much better than horses, for the cultivation of our corn fields in summer.

Annexed is a drawing of the Spanish method of yoking, from which the French mode may be easily understood. NANJAMOY.



TO THE EDITOR OF THE AMERICAN FARMER.

SIR.—Observing in your last number among the answers given to a former enquiry, respecting mills to break the grain and cob of corn together for feeding creatures, that some of the writers mention the same machinery will serve admirably to prepare plaster of paris; I beg leave to remind your readers of an observation of Judge Peters in his pamphlet on the use of that article published 20 years ago, that horses whose feed was chopped at a plaster mill, had become diseased and died, as supposed from obstructions occasioned by the mixture of the powdered gypsum with their food. It was not positively pronounced so, if I remembered rightly, but appeared too probable for him to omit the caution, or I not to repeat it again on this occasion.

It may not be amiss to add respecting the corn cob, that when burnt it will be found to yield a product of almost pure pot ash. The use to be made of this is left to others. J. M.

Baltimore, December 14, 1819.

FOR THE AMERICAN FARMER.

PROCEEDINGS OF THE AGRICULTURAL SOCIETY

OF ALBEMARLE.

Papers communicated for publication by the Corresponding Committee.

No. 2.—Cultivation of Wheat.

READ, OCT. 11th, 1819.

Barbours-Ville, July 26, 1819.

SIR.—Wheat being the staple of the finest portions of the earth, whatever materially concerns its cultivation, is interesting to mankind. Any attempt to communicate information, upon this interesting subject, however abortive it may be, will in regard to the motive for which it originates, be favourably received. A judicious collation of the results of different experiments—results which it behoves every farmer to make public, if attended with any peculiarity, serving if pernicious, as a warning, or if beneficial, inviting to an imitation, will, finally, place within the reach of all, the best system of cultivation. Influenced by these impressions, I take the liberty of communicating to you the results of some experiments I have been making, as also, the reflections to which they have given rise.

The two principal enemies to wheat are the Hessian Fly, and the smut. The discovery of a preventive to their pernicious effects, would be of lasting benefit to the human kind. It has been pursued with an eagerness, in proportion to its importance, but unhappily as yet not with a corresponding success. I have endeavoured to contribute my mite in this laudable undertaking, and herewith present you with the result.

First of the Hessian fly.—It first appeared in this section of the country in 1798. The crops being materially affected, we profited by the suggestions of our northern neighbours, among whom it had been destructive for several preceding years, and postponed seeding from the 20th August to the beginning of October. The result of this was, to expose that which was sown last to the effects of the frost in winter, and the fly in Spring—and hence partial and sometimes indeed a total loss ensued. An awful apprehension began to prevail that the fly was a calamity without remedy. This was at length mitigated, by a rumor that a wheat had been found which was fly proof. Mr. C. Hunton,

of Albemarle, brought some years past, a very small parcel of wheat, which on account of its qualities, he called Columbian, (but which is more generally known as Lawler) from his friends in Fauquier. This wheat he asserted from actual experiment, resisted the fly. Anxious to test its truth, I procured 20lbs. in the autumn of 1815, 2 of which I sowed in my garden, 18 in my corn land, about the middle of October. Both were exempt from the fly, while my other wheat was partially affected. The product of 2lbs. sown in the garden, was 54 1-2 lbs.—that in the corn field 239 lbs., weighing 63 to the bushel. The whole product (being about 5 bushels) was sown on tobacco lands, and in the autumn of 1816—product about 110 bushels. This wheat was near the middle of a field containing about 100 acres. All besides the Lawler wheat, which was uninjured by the fly, was almost utterly destroyed; not producing above 3 bushels to the acre. The crop of 1817 was in a good degree destroyed by the fly. The successful experiments with the fly proof wheat, with the serious loss in the crop of 1817, induced me to purchase 150 bushels of the Lawler; which with my own made 260 bushels. I resolved to commence seeding early in September with the Lawler, and to continue it till the last of September—then sow the ordinary kind, and finish the Lawler, hoping thereby to guard against the effects of the fly as well in the autumn as in the spring.

The crop of 1818 was generally exempt from the fly; the Lawler wheat which was sown early produced a fine crop—the late sowing, a very indifferent one, being somewhat rusted, as well as affected with the smut, in some degree. I resolved to bring to actual experiment its relative capacity with other wheat, to resist the fly; to that end I caused equal quantities of the Lawler and early wheat to be sown on the 27th of August, 1817, in a piece of land cultivated in the Indian pea; under circumstances every way equal. The result was the entire destruction of the early wheat by the fly; while the Lawler wheat was so far exempt from its ravages as to produce a good crop. Emboldened by this experiment, I commenced seeding the last autumn about the first of September. As my tobacco crop was late, and we were at that time finishing its culture, I caused some thirty acres to be sown in the Lawler wheat. The product is superior to any crop I have seen. Although the fly appeared in the wheat, both in the sowing of 1817 and 18, yet it survived the attack without any apparent loss. As yet, therefore, the results of all my experiments justify me in saying that it is substantially able to contend with this formidable enemy to other wheats. Any attempt to account by a satisfactory hypothesis for this quality is entirely apart from my purpose, and therefore will not be made. The staple of this wheat is inferior to none—its relative productiveness (though there be a popular opinion to the contrary) is unquestionably equal as far as my experiments go—but there are other objections of a serious kind, which lie against it—it is a later wheat than the purple straw or bearded, by a week. It will therefore not abide being sown late—as it exposes it to the rust—it has a strong disposition to the smut: and I fear it is liable to what is called by some the sedge, by others the studs. Of this however, I am far from being satisfied. My suspicion was excited by a few naked spots of a very limited extent, (a few yards square only) for which I could no otherwise very satisfactorily account. On smut in wheat, I will now lay before the society my experiments and their results.

The first case of smut which I discovered was in the spring of 1816 in the early wheat, which induced me to examine my crop more minutely; and it resulted in discovering it in small quantities in every kind I cultivated, viz. the Lawler, the bearded, and the purple straw. In 1817, the disease had greatly increased, and made it necessary that resort should be had to some preventive, if indeed any existed. Profiting by the suggestions of the best tracts within my reach on agriculture, I availed myself (believing it the most effectual remedy) of a change of seed as far as practicable. I applied to a neighbour who adjoins me, and who to this day has never had a head of smutty wheat on his estate, for bearded wheat, which, with that of my own seed, I subjected to the following process; I prepared a vessel containing 20 gallons in the shape of a half hogshead, and filling it two-thirds with water, which I saturated with salt: then pouring the grain gradually in, the imperfect grains with some cockle and grains of smut unbroken, were seen swimming on the surface—these I caused to be taken off with a sieve, so as to save the water—I caused it then to be stirred as long as any thing would rise to the surface. The wheat was then taken out and spread on the barn floor. At the moment I commenced washing my wheat, I caused unslacked lime, in the proportion of a gallon of lime to the bushel of wheat, to be placed also on the barn floor, which was then slacked, and when three or four bushels of wheat had been cleansed, the lime was found to be sufficiently cool to be applied to the wheat: which was then well mixed with a weeding hoe. I then superadded a peck of plaster to each bushel, and proceeded immediately to sowing it. The general result has been an exemption from the smut, except in very small quantities, whenever I have pursued this course; as well in wheat growing from my own seed, as from that procured from my neighbour. The last autumn I made a great variety of experiments for the purpose of ascertaining which of the means resorted to was the most effectual antidote: and with the further view of ascertaining some of the characteristics of this disease.

1st. I sowed one-seventh of an acre in Lawler wheat on the 13th September, as far as I could perceive, entirely exempt from the smut, except five grains, which I rubbed in smut. The whole, save the product of the five grains, was exempt from the smut. The product of the five grains full of smut. 2. On the 17th of October, I sowed some of the same kind of wheat without smut—product save a head or two, free from the smut. 3d. I sowed the same wheat covered with smut—product excessively smutty. 4th. I sowed the same wheat with smut, salt, lime, and plaster—product smutty.* 5th. I sowed the same wheat with smut and plaster—product smutty. 6th. I sowed the same wheat with smut and salt—product smutty. 7th. I sowed the same wheat with smut and lime—product exempt from the smut, with the exception of one head, or at most two.

In addition to this is a fallow of 120 acres, the whole except an acre or about that quantity, was salted, limed and plastered, as detailed above: the whole substantially exempt (except the acre) from the smut, while that showed a proportion of one-tenth of smutted wheat. The conclusion I deduce from these facts is, that although the quick lime is not a sovereign remedy, yet it approaches it. That the salt has no such effect; but is nevertheless useful in cleansing the seed wheat. Therefore I am warranted in recommending the process I have pursued as well worthy of imitation.

I think it material to state, that I apprehend from my observations that this process is, in unpropitious weather at the time of seeding, rather unfriendly to its vegetation if sown shallow. Instead of harrowing, I would recommend plouging it in, unless the weather be favourable.

These hints which I respectfully offer to the society, if attended with no other advantages, may attract the attention of some of the more intelligent members to the interesting subject upon which they are offered, and thereby eventually produce beneficial discoveries.

Accept assurances of my respect,

JAS. BARBOUR.

PETER MINOR, Esq.
Secretary of the Agricultural Society of Albemarle.

* This experiment was accidental. Two experiments intended to be separate and distinct were confounded. The salted wheat was not limed, and vice versa.

Baltimore, December 13th, 1819.

MR. SKINNER,

SIR—I was considerably interested, in reading, in your last number of the American Farmer, the address of Mr. Law, President of the Agricultural Society of Prince George's County. He has brought together a variety of useful remarks, which, while they show him to be a man of observation and thinking, will tend to excite in others the important habit of using their senses, for the purpose of furnishing their minds with

idea. He has directed attention to the propriety of mercantile calculation in farming, and to the useful practices of deep ploughing, irrigation, tree-planting, drill husbandry, and among other things to the dairy. On the last subject he makes some observations, that are no doubt novel to many of his readers, and that, in my opinion deserve a little comment. I advert here to his recommending pewter or tin pans, as preferable to earthen or stone ware. He says they will produce more cream from the same quantity of milk. This he infers from these two principles; 1st, that galvanism favours the accumulation of cream; 2dly, that pewter vessels are better galvanic exciters than earthen or stone ware.

The first proposition seems to be a deduction from the well known fact that electricity will *coagulate* milk. Every dairy woman expects to see an unusal portion of her milk turned into clabber during a thunder gust. But this is often effected without the milk's turning *sour;* and it is also a fact, that cream under the common pressure of the atmosphere, never rises so completely as after the acetous process commences. If coagulation then be preternaturally hastened, either by galvinism, the use of rennet, or by astringents, the further accumulation of cream ceases. If, however, a galvanic action be *slowly* excited and kept up, between the milk and the vessel containing it, there is no doubt that it will accelerate that process by which the saccharine matter is changed into an acetous condition; and by this means favour the gathering of the cream. So far then as we regard the greater efficiency of galvanic action, the change from earthen or stone-ware to pewter or tin pans, might be proper. But there are consequences resulting from the properties of those metals that make this change by no means advisable. Both pewter and tin can be acted on by the lactic acid, so as to render the milk very disagreeable to the taste. And the oxidation or rusting of the lead contained in the pewter, will diffuse a deleterious poison through the milk. The tin contained in the pewter or on tinned ware, though not so easily rusted as lead, or so noxious in its effects on the human system, yet gives the milk so bad a taste, that this should condemn its use, without referring to the injurious properties it possesses.

It may perhaps be remarked in opposition to these statements, that these poisons are so diluted, and taken in such small quantities at a time, that they cannot prove pernicious to health. This observation, specious as it may be, is not correct; for the most judicious physicians and chemists have long been proscribing earthen ware, glazed with any of the preparations of lead from a place among culinary or dairy utensils; and that on account of evils arising from the lead even in this partially *vitrified* state. They have frequently advised the use of stone ware as an innocent substitute for the other, because it is glazed with salt, and does not yield to the action of the lactic acid. I will at present conclude by merely observing, that if lead when nearly vitrified, is capable of exciting such just alarm, how much more deleterious must be its effects when exposed in its natural or metallic state to the influence of oxidizing liquids! FRANKLIN.

No. 2.—Proceedings of the Agricultural Society in Prince George's County, Maryland—at their October Session, 1819.

OCTOBER 18, 1819.

SIR—The great injury sustained from the excessive drought of the summer, by vegetables of almost every description, has prevented, I presume, any successful experiment since the last meeting of this society in the growth of plants. Immerged as I have been like my neighbours generally, in the culture of tobacco, and not willing to augment the physical force of my farm, I thought it expedient to attempt some labour saving principle, in the culture of Indian Corn, (an article so important and necessary on a tobacco plantation as to be deemed indispensable) with this view I flushed my field intended for corn in the fall or winter, with three horse ploughs six or eight inches deep, a practice for some time adopted with great advantage, in the spring it was cross ploughed with the same ploughs and harrowed with a large heavy harrow, containing 25 *straight teeth.* I mention their shape because I think the straight teeth have several advantages over curved ones, they are not so apt to clog or choke, and are more easily cleaned when they do. After this it was checked for the purpose of planting from 4 1-2 to 5 feet each way, the corn was dropped by a skilful hand, and covered by withdrawing the middle tooth, from a scuffle, an implement composed of the three teeth of an angle plough placed in a circular, instead of a diagonal beam, to the tail of which is placed a small harrow with three feet to level the ridge made by the covering harrow, drawn by one horse. Thus I performed in three days with two hands, (the dropper and the driver) work that would have required the labour of ten hands five days; after the corn came up it was cultivated in the usual way, by one or two good ploughings with a bare share, and afterwards entirely with the angle plough, an instrument that I believe cannot be surpassed for the cultivation of corn in land clear of stones and stumps; land thus prepared by early tillage requires not the aid of a hoe, another great saving in the labour of the cultivation: the product of the field thus managed is superior to any I have seen this season in a similar soil.

I am your obedient servant,
WILLIAM HEBB.

This communication is hastily sketched in consequence of your request of yesterday.

FROM THE ALBANY ANGUS.

TREATISE ON AGRICULTURE.

SECTION IX.

Of the plants recommended for a course of crops (in the preceding section) and their culture.

These are wheat, rye, barley, Indian corn, oats, buckwheat, peas, beans, turnips, potatoes, cabbages, clover and chickory; but we shall take them in the order in which they stand in the proposed rotation of crops; and,

1. *Of the potatoe.*

This plant is a native of America, and like other valuable things, has had violent enemies and zealous friends. When first introduced into France it was subjected to the imperfect methods of analysis of that day, and being supposed to yield some deleterious matter, was even proscribed by the government; but time, which rarely fails to do justice to the injured, has re-established it *there,* and with the increased reputation of being the "*manna of the poor,*" (1) of standing as an article of food, next to bread, (2) and far before cabbage, carrots or turnips; (3) and of yielding, by the acre, a crop of greater profit and more nutritive matter than either wheat or barley. (4) Nor is this its whole praise; for besides its value as a food, it is of all vegetables that which, from the number, shape and size of its roots, forms the best preparation for subsequent crops. (5) Of this valuable plant botanists count more than *sixty varieties* and *twelve species,* which, for agricultural purposes, may however, be reduced to *three;* the red, the white, and that called by the French the *quarantaine,* or forty days potatoe. The last is the least prolific; but may notwithstanding, deserve the preference with cultivators near great cities; because, besides being the first in the market, they may be made to give a second crop. The other two are supposed to affect different kinds of soil; the red preferring clay; and the white sand or loam. Of the former, there is a variety, more productive than any other of either species, and which is known (and we think degraded) by the name of the *hog potatoe.* Of this variety, without any peculiar care, we have raised 108 bushels on one quarter of an acre.

Two ways are employed to propagate the potatoe; 1st, by sowing the seed; and 2d, by planting the root. By the former method we obtain new varieties, or revive old ones; but as it requires three years to bring these to maturity, it follows, that the other method, which continues the species you plant, and in the perfection in which you plant them, is alone resorted to for a crop. The product is small or great, or enormous, according to the fertility of the soil and the labour bestowed upon its cultivation. We have never seen a larger product from the acre, than 400 bushels; but there are records of high authority, which give much larger crops, and from which, in justice to our subject, we offer the following extracts:

"At Altingham, in England, a sandy soil gave 700 "bushels per acre. At Kirklatham a similar soil gave "580 bushels; and a black rich loam, 1166 bushels."(6)

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(1) Dictionaire de L'Industrie. Art. Pommecle terre.

(2) Experiments of Vaugelin and Percy, 80 parts out of 100 of bread are nutritive, of the potatoe 25, or nearly 1-4.

(3) "6 killogrammes de pommes de terre equivaloiant 50 killogrammes de navet" Yvart.

(4) 200 bushels a medium crop per acre of potatoes, are, at 3*s.* per bushel, equal to 75 dollars; and a medium crop of wheat, 15 bushels per acre, at even 16*s.* per bushel is but 30 dollars; difference per acre, 11, 35.

(5) Parmentier of the French Institute.

(6) See vol. 13, p. 114, of the British Annual Register. Some persons have imagined that by cutting the flowers of the potatoe, the crop may be increased, and analogy forms the opinion. The procreative powers of the plant are thus diverted from the apple and concentrated in the bulb.

We need hardly remark that such immense products were procured only by the most careful and well timed cultivation; which we shall now proceed to indicate, under three different heads, 1st, the preparation of the soil; 2d, the choice of plants and mode of planting; and lastly, the treatment of the growing crop.

1st. Of the preparation of the soil.

Give your field intended for potatoes a good fall ploughing, and in ridges, if the soil be clay. Leave it rough and open to the influence of the frost, during the winter; and as early in the spring as you discover in it the mark of vegetation, harrow and roll it. When the weeds show themselves a second time, carry out your manure, cover the fields with it and plough it under. If the quantity of manure be insufficient to cover the whole surface, apply it to the furrows only, and if, as may happen, it be even insufficient for this purpose, then furrow both ways, manure the angles of intersection, and set your potatoes in them.

2d. Of the choice of plants and mode of planting.

Some economists begin by paring the potatoe and planting only the skins; others, less saving, cut the potatoes into slices, leaving a single eye to each slice; and a third class, almost as provident as the other two, are careful to pick out the dwarfs, and reasonable enough to expect from them a progeny of giants. These practices cannot be too much censured, or too soon abandoned, because directly opposed both by reason and experience. In other cases we take great pains, and sometimes incur great expense, to obtain the best seed. In the cultivation of wheat we reject all small, premature, worm eaten, or otherwise imperfect grains; in preparing for a crop of Indian corn, we select the best ears, and even strip from these the small or ill-shaped grains at the ends of the cob; so also in planting beets, carrots, parsnips and turnips, the largest and finest are selected for seed. The reason of all this is obvious:—Plants, like animals, are rendered most perfect by selecting the finest individuals of the species from which to breed. Away then with such miserable economy, and instead of planting skins, or slices, or dwarfs, take for seed the best and largest potatoes; (those having in themselves the most aliment for the young plants) [7] place them in your furrows ten or twelve inches apart, and cover them carefully with earth.

3d. Of the treatment of the growing crop.

As soon as the potatoes begin to show themselves, weeds will also appear; a good harrowing will then save much future labour, and the injury it does the potatoe will be little or none. In a short time another weeding will become necessary; but your crop having now obtained some inches in height, you can no longer safely use the common harrow; but instead of this, the small one of triangular form, so made as to accommodate itself to the width of the intervals. This labour may be occasionally repeated, if necessary, until the potatoes begin to flower, when the *horse hoe* must be substituted for the harrow. The effects of this instrument (the horse hoe) are to extirpate the weeds, to divide and loosen the soil, and to throw over the potatoes an additional covering of earth.

The harvesting and preserving of potatoe crops are processes well known in this country. With regard to the latter, however, we would suggest, whether stacking potatoes on the surface of the soil and with a narrow base is not a better mode than burying them in the ground. Fifteen bushels will be enough for one stack, which must be well covered with straw and earth, and trenched around its whole circumference to carry off dissolving snows and rain water.

II. *Of Rye.*

This grain, though of the same family with wheat, is less valuable. A bushel of rye weighs less, and gives less flour, and of worse quality, than a bushel of wheat. In comparison, therefore, with wheat, it fails; still there are circumstances, which, as an object of culture, may give it the preference; 1st, it grows well in soils where wheat cannot be raised; 2d, it bears a much great degree of cold than wheat; 3d, it goes through all the phases of vegetation in a shorter period, and of course exhausts the soil less; [8] 4th, if sown early in the fall, it gives a great deal of pasture, without much eventual injury to the crop; and 5th, its produce, from an equal surface, is one sixth greater than that of wheat. These circumstances render it peculiarly precious to poor soils and poor people, to mountains of great elevation and to high northern latitudes. [9]

Its use, as a food for horses, is known as well in this country as in Europe. The grain chopped and the straw cut and mixed, forms the principal horse food in Pennsylvania; and in Germany the postillions are often found slicing a black and hard rye bread called *bonpournikle*, for the post and other horses; and the same practice prevails in Belgium and Holland.

Its conversion into whiskey is a use less approved by reason and patriotism; but if a spirituous liquor must be drank we have no scruple of preferring the form of whiskey, [of our own making] as that which, on the whole, is least injurious to the human body and most beneficial for the body politic.

The species of this grain cultivated here, are two; the *black* and the *white;* for spring rye, [often mistaken for a *species*] is but a *variety*, produced by time and culture, and restored again to its former character and habits by a similar process. [10]

According to the course of crops detailed in our last section, potatoes, in a sandy soil, precede rye. The ploughing, harrowing and manuring given to *that* crop will therefore make part of the preparation necessary for *this*. After harvesting the potatoes, cross plough the ground and sow and harrow in the rye, taking care, as in all other cases, that the seed be carefully selected and thoroughly washed in lime water, as the means best calculated to prevent the *ergot;* a disease, to which it is most liable, and which is supposed to be an effect of too great humidity. [11]

Rye is not exempt from the attacks of insects; but suffers less from them than either wheat or barley. Whenever the straw of winter rye becomes yellow, shining and flinty, and circulates no more juices, nature makes the signal for harvest, and no time should be lost in obeying it. "*Cut two days too soon, rather than one day too late,*" was among the precepts of Cato; which, if adopted here, would save much grain —terminate the harvest about the 10th of July, and give abundant time to turn down the stubble, and sow the crop next in succession.

III. *Turnips.*

These are said to be natives of the sea coast of the north of Europe, where they are found growing spontaneously. There are of them eight species, and many varieties; but as they have the same character and uses, and require nearly the same treatment, we shall only speak of the *white* turnip and the *yellow*.

Two methods of cultivation have been pursued, according to the plan, either of turning them down as manure, or of consuming them on the field, or in the stable, by sheep or cattle. In the first case, the harrow is used instead of the plough; and even upon light porous soil, is a pretty good substitute. The seed is sown after the harrow, and, but too frequently, left to its own protection. In the other case, the plough is first used, and after it the harrow; a method much to be preferred, as the difference of crops will more than pay the difference of labour, the only advantage claimed by those who advocate and adopt the first method.

Our own practice is to plough in the stubble, harrow the ground lightly and sow the turnip seed, in the quantity of two pounds to the acre. This allows something for insects and something for waste. When the plants are generally above ground, give them a light covering of ashes, which, by quickening the growth of the plants and leaching on their leaves at the same time, better protects them against the fly than any other means practicable on a large scale, with which we are acquainted. [12] When the plants attain the height of four inches, we set the horse hoe to work; running a furrow the whole length, or breadth, of the field, and returning with another, at the distance of three feet from the former, and so continuing the work, till the whole is laid off into beds of that width. What we lose by this method is only the seed buried by the horse hoe; what we gain, is the manure created by the young plants, ploughed in between the beds, and the advantage of being able to weed and work those left standing for the crop. This part of the labour, which immediately follows the horse hoeing, is expeditiously performed by two men, travelling in the furrows, one on each side of a bed, and employing themselves in thinning and hand hoeing the surplus plants. These operations, of plouging and weeding, may be performed a second, and even a third time, with advantage.

If we determine to plough in the crop as manure, we should do it while the ground retains a temperature favourable to the decomposition of plants, and before the frost has diminished their volume, or altered their juices. If, on the other hand, we decide on feeding off the crop on the ground, it is but necessary to turn in your sheep upon it, under such restrictions as will limit their range, and prevent waste; and, indeed, that nothing should be lost, hogs should be made to follow the sheep. If, however, feeding in the stables be thought more adviseable, (and it certainly better economises both food and manure) the turnips should be drawn, topped and stacked; interposing between each layer of them, one of coarse hay or other barn rubbish, and capping the whole with a few bundles of clean long straw. Though less nutritive than either potatoes, carrots or cabbages, the turnip is found to be particularly useful to stall feed cattle, correcting, by its aqueous qualities, the heating effects of corn, oats or rye meal.

Our acquaintance with the yellow turnip (or ruta baga) is but beginning. Mr. Cobbett's experiments have however, been very successful, and tend much to recommend the plant, in preference to the white or common species. That, of the two, it is the more compact, the heavier, the more nutritious, the less apt to become stringy and the more easily preserved, are facts not to be contested. In both France and England, it is rising in reputation, and perhaps wants only time to get into general use here. To this article we will but add an extract from the work of M. D'Edelcrantz, (of Sweden) on the ruta baga.

"Its root is milder and more saccharine than that of the other species, particularly when boiled. Its flesh is harder and more consistent; which better enables it to withstand frosts, and to keep from one year to another. Its leaves extend horizontally, and may be stripped off from time to time, as wanted for forage, without injuring the product of the root; which, in good soil, gives on the acre of Sweden, 350 quintals, and in even poor soil, a good crop. We sow half a pound of seed, about the beginning or middle of May, which will give plants enough to fill an acre. Transplanting is performed about the last of June or first of July. To set out and water 5 or 600 feet in a day, is a task of one man, or of two women. One or two hoeings augment the product much. The harvest is made about the first of November, and the turnips are covered in ditches, or in dry caves or cellars, for winter use."

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[7] The interior of the potatoe forms the *fecula* which subsists in the young plants.

[8] We have seen a field bear rye several years in in succession without manure, and the last crop was much the best. This fact is one of those which tend to discredit theory.

[9] Without rye a great part of Russia would be uninhabitable What we have seen of Archangel or Russian rye is a miserable specimen—black and light.

[10] Spring rye, sown in the fall, will give a tolerable crop; winter rye sown in the spring, a very bad one: which shows, that the nature of the plant requires a *slow*, rather than a *quick* vegetation.

[11] See Tessier on the diseases of plants.

[12] On a small scale, water, in which potatoes have been boiled, is believed to be very useful in protecting cabbage, turnips and other plants, from the attacks of the fly. We are in a course of experiments, which will determine how far this remedy may be relied upon.

FROM THE NATIONAL INTELLIGENCER.

On the Grape Vine, with its Wines, Brandies, Salt, and Dried Fruits.

No. V.

The whole of the peninsula of European Spain and Portugal freely produces the vine, and makes abundance of wines, brandies, and the dried raisin. Those two kingdoms, extending from 36 degrees north latitude nearly to 44, and giving us the *Xeres* or Sherry, Pahazetta; St Lucar, Benecarlo, Malaga, or dry and sweet mountain and Catalonia wines, from Spain; and the Lisbon, Carcavella, and Port wines, from Portugal, demand our careful examination. Our continent, from 35 27, when cleared and drained, will doubtless give us all these wines.

The following copy of an original letter, from an observing and intelligent young American traveller, will present us with an interesting opening of the subject of Spanish wines. It is not the worse for being more than fifteen years old, as authorities should exhibit various times and places, in an inquiry which proceeds in the form of an induction of particulars. The writer mentions those vine countries of Europe from which the North American *Cohauila* probably obtained its vines, grapes, vine dressers, distillers of brandy, and the dryers of its raisins.

Cadiz, March 24th, 1804.

Knowing that any information respecting the culture of the vine will be acceptable to you, I find satisfaction in communicating what little I have been able to collect here.

In the vineyards of this country are cultivated several sorts of grapes, such as are called *Palomino Pedro Ziminez, Perruno Canocaro Bejerego Muntero, Abbillo, Alicante, Moscatel* merudo,* *Moscatel* gordo,† and several other kinds, which it is not necessary to particularize. The culture of them all is the same, and as follows:—During the summer months, the land on which you intend to plant the vines is *dug*, by some three-quarters, by others one yard, and by a few five-quarters. In the month of January the plants are put in the ground in two ways, *either* by making a hole with an iron bar, *or*, with a spade, or any like instrument. When the plant is put into the ground, care must be taken in filling up the hole to tread the earth well about it. The plants that are used are young branches of the foregoing year, which are taken off the old vines at the time of pruning; which is the space between gathering the grape and the time they are likely to shoot. The year after the vine is planted you cut the stalk to a certain height, which generally is done so that only five or six buds remain on the stalk above ground. You thus leave the plant until it shoots, after these are secured from frosts, and other accidents, which can destroy some of them, you cut all the shoots excepting the highest, and when the time of pruning comes you prune these shoots, leaving each of them only one bud, and then take your choice of the two original buds that have shot the year before, for your vine to form a head. If the highest is the best, you cut off the whole second; or if it is the lowest you prefer, cut off the highest—and by that means leave only one. You must every year prune your vine, and for a certain number of years, until you see it has grown strong and healthy, you cut off the new branches, each only one bud from the stalk; and if any of these branches have shot out of the way, so as to be likely to spoil the head of your vine, by having shot lower, or are very weak, you cut them off; or if two together, you lop off the feeblest that the other may gain more strength.

When your vine is eight or ten years old, and the stalk is stout and strong, every year, when pruning, you leave one of the best shoots of the foregoing year, with about four or five buds; as the vigour and substance of these mature stalks are better able to nourish these members than those of a less ripened age. The same sort of vine gives a richer or poorer wine, according to the nature of the land in which it is planted. Wheat land is *not good* for the *vine*. The best is a white chalky or clay land, such as when it is first dug comes out in large pieces, and has almost the consistence of soft stones. The next is red clay, and the last and worst, is the *sandy*. After you prune you must dig the vineyard, leaving a large square hole to each vine that it may keep the rain. This is done *in Spain*, on account of its being more generally *dry than wet*. But if it lies on a low piece of ground, you then dig it, *raising* the earth in *rows* between the vines, parallel to one another that the *rain* may run off before the vine shoots. Again you dig the ground and leave it even, when the new shoots are strong enough to bear going through the vine ground without tearing them off, you give it another digging, but shallow; and when the grape is near ripening, you give it another very slight digging, (to save labour the plough, harrow, and horse hoe, may be used, where land is abundant.)

When your vine shoots, you take off the bud shoots, as before directed. All young plants must have sticks to them to hinder them from growing crooked. The long branches left on the vine must, after it has grapes, be raised from the ground, and supported with sticks, in order both to be able to dig the ground, and to prevent the grapes from rotting, from the moisture thereof. Vines very often shoot from the very root. These shoots *must* be carefully taken away, that a young vine should not root too near the suface, which would expose it to be parched up with the solar rays and to have the roots of it cut when dug. Care must be taken every year, when the hole is made about them, to shave off all the young roots it may have. When any of the vines decay, it must be replaced by a *branch* of the *next to it*, which is done by leaving this with two branches, digging a trench three quarters of a yard, or a yard deep, from one to another, then burying the two branches, carrying one to the place of the decayed vine and leaving the other in the place of the one buried. These are treated in every respect as young vines It will never answer to set a new palnt amongst *old* vines, for it cannot thrive. The vines are set in regular rows, similar to our corn fields, at the distance of one yard and three quarters apart.

I will conclude with a few remarks on *the process of the juice of the grape*.

The best grapes for making wine are *Pelomino, Pedro, Ximenos* and *Parruno;* the two first are generally *mixed together* to be pressed, but they will do separately. The first will then make a very dry wine, and the second a sweet wine, called "*Paharete.*" The *Perruno* is always pressed alone, because it ripens after the others are gathered. (This grape will probably suit the most southern states of North America.) It makes a very dry wine, and of good quality. Many people dislike its culture, on account of its ripening so late; which makes the vintage liable to be s oiled by rains. However if the rain does not fall very abundantly, it rather does good than harm. (May ot irrigation suit the vine?) At the time of pressing, some *chalk* is thrown over the grapes. But this is done more with a view to give them a kind of consistence, that they may adhere better together when pressed, than from any idea of improving the wine. Yet I am not sure that it does not in some degree tend to give the wine that *dryness* which is so much admired.

In wine of *young vines* you put about 1-15th of *boiled* juice of grape, which has been reduced to one-fourth its primitive quanity, and is quite black, thick, and sweet, (resembling molasses) in order to give it the strength and richness it requires If you choose, or should perceive in your wine after the vinous fermentation is over and the ebullition has ceased, any weakness, you then add to them about one thirteenth part of oil-proof brandy. Thus you will give them a body, make them full the sooner, and preserve them from the power of the warm weather.

In addition to all this I must add, that it is absolutely necessary to keep a constant watch over them, and assist them with more brandy if you see that they stand in need thereof.

The mixture of different kinds of grapes, (the *sweet*, or highly saccharine, with those not sweet,) mentioned in the foregoing letter, is worthy of consideration. The proportions may require experience and judgment. The evaporation of the watery parts of the *fresh* juice, by the application of the proper degree of heat, *before fermentation*, is also well worthy of notice. In the course of long and studious inquiries into the causes of the fine full body of the best wine of *Xeres*, Sherry, famous since the days of Falstaff, this mode of preparing that Spanish Andalusia wine, has been brought into view, from various authorities. There can be no doubt of the fact.

It appears from the statement of *the comparative forwardness of the spring*, in different parts of the United States, published in 1813, and from a note thereon, respecting Spain, by Doctor Jacob Bigelow, of Harvard University, that the peach tree (*Amygdatus Persica*) blossomed at

Fort Claiborne, Alabama, in latitude 31 50, long. 87 55, W. March 4.

Charleston, S. Carolina, do. 32 44, do. 83 39, id. 6 to 12.

Valencia, on the Mediterranean coast of Spain, do. 39 18, do. 0 5 min. id. 19.

Richmond, Virginia, do. 37 10, do. 77 50, id. 23d to April 6.

Lexington, Kentucky, do. 38 06, do. 85 08, April 6 to 16.

Baltimore; Maryland, do. 39 21, do. 77 48, id. 9.

It will be seen that the elevation by the westing and northing of Lexington, in Kentucky, compared with Fort Claiborne, Alabama and Richmond, Va. do not present very serious differences, by the delicate test of the peach tree. But this test of the state of climate in various places, by means of *the time of flowering* of trees, *common to all our latitudes*, is not good. The peach grows in Vermont and Maine, and in Canada. It put forth its blossoms in the town of Montreal, latitude 45 35, on the 18th of May. The inferiority of the fruit in Canada, compared with those of our Southern states, though not to be doubted, could not be reduced to a scale of degrees. A better test is to be drawn from the actual flourishing of vegetable productions within certain limits of our country. The *sugar cane* begins to appear, in a flourishing condition, in our countries on the Gulf of Mexico, and prevails for a number of miles north of the Gulf; but its vital warmth yields to a cooler climate. So the *cotton plant* is productive on the Gulf, and for a very considerable distance northward, gradually falling off, in the *certainty* and in the *quantity* of the crop, till it ceases to deserve any attention in the middle counties of the Chesapeake country. The sweet orange, which grows in the parrallels of latitude of New Orleans and St. Augustine, affords the narrowest and strongest demarcation of a climaterial line of any of our productions. Since it flourishes at Lisbon, and the vine grows there, and throughout several degrees of latitude in Portugal and Spain, south of Lisbon, there can be no doubt that, with a *proper quality* and *form* of soil, the grape vine will give abundant crops in all the country of the United States, including the most southern extent of our open *Louisianna* claim, or our proposed substitute under the Florida treaty.

Recommencing at this orange line of New Orleans and St. Augustine, and proceeding north on our continent as many degrees (being eleven) as from the parallel of Lisbon to that of the north part of Champagne, in France, where the wines of that country are good and plentiful, we find the vine region of our country beginning at the mouth of the Rio Bravo del Norte, and extending through the parallel of New Orleans, reaches to the end of the 41st degree; supposing our country to be as much cleared of forests, and as well drained in its swamps, marshes, and river bottoms, as Spain, Portugal, and France. In the present state of the country we may deduct two or three of those degrees, and confine ourselves by the imitation of the tried and successful vineyards of *Vevay* and *Harmony* in Indiana.

A Friend to the National Industry.

Philadelphia, Nov. 8, 1819.

* Small.
† Large.

OCCASIONAL EXTRACTS,

FROM LETTERS TO THE EDITOR.

Lexington, Va. Nov. 29, 1819.

Mr. Skinner.—I have read with attention and instruction, the very clear and satisfactory information given by Sylvanus and Mr. Hillen, on cider making, in reply to my enquiries on that subject; and it affords me pleasure to avail myself of this opportunity, to acknowledge my obligations to those gentlemen, for their valuable communications; which, I make no doubt, will be duly appreciated by the public as well as by myself. I possess but a very limited stock of agricultural knowledge, and their kindness, together with your polite attention to every interesting inquiry, encourages me to seek for further information through the columns of your very valuable paper; and, that my views may be more distinctly understood, it may be necessary to inform you that my rotation of crops has been precisely the same, as that mentioned by Mr. Lee in the 15th No. of the Farmer, with the exception of the two last years. Having found a large corn crop and the clover harvest to interfere, more than was consistent with the necessary attention to both, I substituted oats *in parts*, as a fallow crop, (for the want of a better.) I never esteemed it very highly, and, in the late dry seasons, I found it to be the only crop that did not compensate me for the labour bestowed on it.

Now, Sir, my object is to be informed whether any, and if any, what fallow crop (corn excepted,) can be introduced in the middle states as a profitable substitute for oats, with a description of the best mode of cultivating it; and of the soil and situation best adapted to its growth? It is of importance that it should come to maturity early in September, that time may be afforded to seed the ground with winter grain, before the time for cutting corn, (which I shall notice hereafter) and how it is to be taken off the ground; if to be cut with the scythe, I would consider it to be more desirable on that account.

I have observed that the Heligoland bean stands high in the estimation of the Agricultural Society of South Carolina, but no instruction is given for its cultivation, nor is it probable that at present a sufficiency of seed could be obtained in this country.

It is obvious that the Ruta Baga is not suited to my purpose: but as it may in other respects be very valuable, I wish to know how far it is deserving of the high encomiums bestowed on it by Mr. Cobbett, and whether or not it would succeed as well on strong *new* land, as on old manured ground? Many of your correspondents have had one year's experience, and could give all the necessary information.

I will now make a few observations on the advantages of cutting up corn, and as my practice differs in some measures from that advocated by gentlemen whose opinions are entitled to great respect, it is with diffidence that I touch upon the subject. I will, however, offer my sentiments (founded on my own experience) and they may be taken for what they are worth I am an advocate for it in any way, in preference to the old slovenly habit of seeding among the corn, as nothing short of cutting it up will enable the farmer to seed in a manner that will justify the expectation of a good crop, nor enable him to leave the land smooth and in good order, for clover seed and the scythe; but am induced to believe, that the mode of cutting ought to be adapted to the uses for which the corn is intended.

It is well known, that the practice of cutting corn with the tops and blades on it originated with the feeders of stock. It is given *in that state* to their cattle, their sheep and hogs are then brought in succession, to collect what is scattered by the cattle, and would otherwise be lost, and I have no reason to doubt that this practice is well suited to the purposes for which it was introduced.

I made the experiment in this way, about the 20th of September 1814, with a crop that was intended for *other purposes*. It was heavy and inconvenient to handle, a great number of the stack were blown down in windy weather. They were necessarily taken down to husk the corn, then to set up again. The corn lay all over the field, and it was frequently necessary in the winter to haul the stalks, when the ground was soft, and the operation injurious to the small grain. These considerations induced me to adopt a different practice, which I have since pursued, and expect to continue. I would not in any case stack the corn in the field; it produces inconvenience in seeding, and in the experiments that I made, the grain on which the stacks stood perished. I would recommend cutting the tops at the usual time, which rarely interferes with any other business; if the season was good for clover I would leave the blades, otherwise I would take them off. In general I commence cutting from the 20th Sept. to the 1st Oct. according to the season, and haul it immediately to the barn-yard, where it is set up in long ricks, (about 18 inches thick on each side) against forks and poles of a suitable height. Two wagons, one set of horses and six hands, or in that ratio, appears to me to be the best distribution of force; one of the hands to stack, one to unload, and three to cut and assist the wagoner in loading.

Many farmers cut their corn with hoes, which renders it very difficult to collect. The better course is to use knives, made in the form of a butcher's cleaver. They may be made of old straw knives, the blade about ten, and the shank and handle fifteen inches long. Each hand ought to cut two rows, and two hands should throw their corn together; this will bring the product of eight hills into each parcel, in which state it is very easily collected. I freely admit that the other mode has, in one respect, the advantage of mine, in admitting of earlier cutting, as when stacked in the field with the tops on, it will cure more speedily: but when I used corn exclusively as a fallow crop; my seeding was done in time to produce good crops of wheat. I would, however, prefer something else *in part*, as will appear from some of the preceding inquiries.

That I may not lead others into error, I will observe that my land is a light loam, with a moderate proportion of sand, and the crops come early to maturity. Those who have cold heavy lands would do well to make their experiments on a limited scale.

I have seen in the Richmond Enquirer, (I think in the course of last winter,) an account of a very *early* and *productive* kind of corn raised either in Vermont or Massachusetts, which was very much sought for. If seed of this kind could be obtained, I would desire no better fallow crop, as the only objection to cutting up would be removed. SIDNEY.

ON RAISING ONION SEED.

Mr. Skinner.—In cultivating onions much depends on the seed. Blaster seed will not vegetate, and the plants from old seed are not as vigorous as from the new.

In the fall, select from your onions the longest and handsomest, and those which are perfectly ripe; let them be put into the cellar and kept from the frost, In the spring select a piece of rich ground, and after it is thoroughly manured, well ploughed and harrowed—dig trenches about three feet from each other, and three inches deep—set your onions in them, about two inches apart, and cover them with earth. They should be hoed frequently and wed carefully. In order to render them vigorous, and to protect them from storms, they should be hilled nearly as high as the swelled part of the seed stalk, which stalk should not in any way be injured. The seed should be gathered when it begins to shell out and it can be easily ascertained whether it will vegetate by soaking it in water. It should be carefully kept from mice.

S. F.

THE FARMER.

BALTIMORE, FRIDAY, DECEMBER 17, 1819.

Many communications are lying over, waiting their turn for insertion; amongst them Agricultural Chemistry, No. 2.

The Editor has been exceedingly mortified at finding that in some instances, bills have been sent to persons who had already paid.—In several cases gentlemen have been kind enough to receive and send on subscription money without particularly designating on whose account. We trust, however, that our subscribers will consider that the paper is yet in its infancy and that the Editor, besides his being wholly inexperienced, has not time to arrange and attend to the *details* of the establishment; but he can promise that every precaution will be adopted to cure all irregularities as soon as possible.